

WHAT IS CLAIMED IS:

1. A surface acoustic wave device having a balance-unbalance conversion function, comprising:

at least two surface acoustic wave filter devices having at least two comb-shaped electrode portions; wherein

a first of the at least two surface acoustic wave filter devices is connected to a first one of balanced signal terminals, and a second of the at least two surface acoustic wave devices is connected to a second one of the balanced signal terminals; and

said first and second surface acoustic wave filter devices have a configuration wherein a difference in intensity of an excited surface skimming bulk wave occurs therebetween.

2. A surface acoustic wave device according to Claim 1, wherein said first and second surface acoustic wave filter devices include IDTs having different intervals between tips of electrode fingers and bus bars so as to produce a difference in the intensity of the excited surface skimming bulk wave between said first and second surface acoustic wave filter devices.

3. A surface acoustic wave device according to Claim 1, wherein said first and second surface acoustic wave filter devices include IDTs having different intervals between tips of electrode fingers and dummy electrode fingers, each of which are connected to a bus bar so as to effect a difference in the intensity of the excited surface skimming bulk wave between said first and second surface acoustic wave filter devices.

4. A surface acoustic wave device according to Claim 1, wherein said first and second surface acoustic wave filter devices include comb-shaped electrodes having lengths of dummy electrode fingers, each of which are connected to a bus bar so as to be introduced between an electrode finger and a bus bar in order to effect a difference in the intensity of the excited surface skimming bulk wave between said first and second surface acoustic wave filter devices.

5. A surface acoustic wave device according to Claim 1, wherein said first and second surface acoustic wave filter devices include at least one of, IDTs having film thicknesses of bus bars that are different from one another, and a film structure that is different from one another, in order to effect a difference in the intensity of the excited surface skimming bulk wave between said first and second surface acoustic wave filter devices.

6. A surface acoustic wave device according to Claim 1, wherein said first and second surface acoustic wave filter devices include IDTs having sound absorptive material coated on bus bars, at least one of the compositions and the thicknesses of the sound absorptive material of the first and second surface acoustic wave filter devices being different from one another, so as to effect a difference in the intensity of the excited surface skimming bulk wave between said first and second surface acoustic wave filter devices.

7. A surface acoustic wave device according to Claim 1, wherein all of said comb-shaped electrode portions have different structures between said first and second surface acoustic wave filters.

8. A surface acoustic wave device according to Claim 1, wherein at least one of said comb-shaped electrode portions has a different structure between said first and second surface acoustic wave filters.

9. A surface acoustic wave device according to Claim 1, wherein each of said first and second surface acoustic wave filter devices are serially connected to a surface acoustic wave resonator.

10. A surface acoustic wave device according to Claim 1, wherein electrode fingers of a portion facing a comb-shaped electrode portion coupled to a comb-shaped electrode portion connected to the first of the balanced signal terminals are connected to a signal terminal, and electrode fingers of a portion facing a comb-shaped electrode portion coupled to a comb-shaped electrode portion connected to the second of the balanced signal terminals are grounded.

11. A surface acoustic wave device according to Claim 1, wherein said comb-shaped electrodes are arranged with an interval between tips of electrode fingers and a bus bar of about $0.1\ \mu\text{m}$ or more, and equal to or less than about 0.55 times as great as the wavelength of the surface acoustic wave propagating thereon.

12. A communication device comprising a surface acoustic wave device according to Claim 1.

13. A surface acoustic wave device including a surface acoustic wave filter with a balance-unbalance conversion function, comprising:

at least three comb-shaped electrode portions; wherein

a difference in intensity of a surface skimming bulk wave is produced between one of the at least three comb-shaped electrode portions that is connected to a first of balanced signal

terminals and another of the comb-shaped electrode portions that is connected to a second of the balanced signal terminals.

14. A surface acoustic wave device according to Claim 13, wherein a plurality of said surface acoustic wave filters are connected serially.

15. A surface acoustic wave device according to Claim 13, wherein each of said comb-shaped portions connected to said balanced signal terminals have different intervals of tips of electrode fingers and bus bars so as to effect a difference in the intensity of the excited surface skimming bulk wave therebetween.

16. A surface acoustic wave device according to Claim 13, wherein each of said comb-shaped portions connected to said balanced signal terminals have different intervals of tips of electrode fingers and dummy electrodes, each of which are connected to a bus bar so as to effect a difference in the intensity of the excited surface skimming bulk wave therebetween.

17. A surface acoustic wave device according to Claim 13, wherein each of said comb-shaped portions connected to said balanced signal terminals include different lengths of dummy electrode fingers, each of which are connected to a bus bar so as to be introduced between an electrode finger and said bus bar in order to effect a difference in the intensity of the excited surface skimming bulk wave therebetween.

18. A surface acoustic wave device according to Claim 13, wherein each of said comb-shaped portions connected to said balanced signal terminals has at least one of different film thicknesses and different film structures of bus bar portions so as to effect a difference in the intensity of the excited surface skimming bulk wave therebetween.

19. A surface acoustic wave device according to Claim 13, wherein each of said comb-shaped portions connected to said balanced signal terminals include sound absorptive material with which bus bars are coated, the sound absorptive material of each of said comb-shaped portions having at least one of different compositions and different thicknesses, so as to effect a difference in the intensity of the excited surface skimming bulk wave therebetween.

20. A surface acoustic wave device according to Claim 14, wherein the surface acoustic wave filters is serially connected to a surface acoustic wave resonator.

21. A surface acoustic wave device according to Claim 13, wherein electrode fingers of a portion facing one of the comb-shaped electrode portions coupled to the comb-shaped electrode portions connected to the first of the balanced signal terminals are connected to a signal

terminal, and electrode fingers of a portion facing the comb-shaped electrode portion coupled to the comb-shaped electrode portion connected to the second of the balanced signal terminals are grounded.

22. A surface acoustic wave device according to Claim 13, wherein said comb-shaped electrodes are arranged with an interval between tips of electrode fingers and a bus bar of about 0.1 μm or more, and equal to or less than about 0.55 times as great as the wavelength of the surface acoustic wave propagating thereon.

23. A communication device including a surface acoustic wave device according to Claim 13.

24. A surface acoustic wave device including:
at least one surface acoustic wave filter having a balance-unbalance conversion function and including at least two comb-shaped electrode portions; and
surface acoustic wave resonators serially connected to respective balanced signal terminals of said surface acoustic wave device; wherein
said surface acoustic wave resonators having different intervals between tips of electrode fingers and bus bars thereof.

25. A surface acoustic wave device comprising:
at least two surface acoustic wave filter devices according to Claim 24, each of which includes at least two comb-shaped electrode portions; wherein
one of said balanced signal terminals of said surface acoustic wave device is connected to a first of said at least two surface acoustic wave filter devices and the other of said balanced signal terminals is connected to a second of said at least two surface acoustic wave filter devices;
said first and second surface acoustic wave filter devices have a difference in at least one of:
an interval between tips of electrode fingers and a bus bar,
an interval between tips of electrode fingers and dummy electrode fingers connected to a bus bar,
an length of dummy electrode fingers connected to a bus bar,
a film thickness of said bus bar,
a film structure of said bus bar,

and including a difference in at least one of the material of a sound absorptive material with which said bus bar is coated, and the thickness thereof, between said first and second surface acoustic wave filter devices.

26. A surface acoustic wave device according to Claim 24, including at least three comb-shaped electrode portions, wherein one of said comb-shaped electrode portions connected to a first of the balanced signal terminals of said surface acoustic wave device and another one of said comb-shaped electrode portions connected to a second of said balanced signal terminals have a difference in at least one of:

an interval between tips of electrode fingers and a bus bar,

an interval between tips of electrode fingers and dummy electrode fingers

connected to a bus bar,

a length of dummy electrode fingers each of which are connected to said bus bar,

a film thickness of said bus bar,

a film structure of said bus bar,

and including a difference in at least one of:

a material of a sound absorptive material with which said bus bar is coated, and a thickness thereof, between said comb-shaped electrode portions connected to said balanced signal terminals.

27. A surface acoustic wave device according to Claim 24, wherein electrode fingers of a portion facing one of the comb-shaped electrode portions coupled to another of the comb-shaped electrode portions connected to a first of the balanced signal terminals are connected to a signal terminal, and electrode fingers of a portion facing one of the comb-shaped electrode portions coupled to another of the comb-shaped electrode portions connected to a second of the balanced signal terminals are grounded.

28. A surface acoustic wave device according to Claim 24, wherein said comb-shaped electrodes are arranged with an interval between tips of electrode fingers and a bus bar of about $0.1\text{ }\mu\text{m}$ or more, and equal to or less than about 0.55 times as great as the wavelength of the surface acoustic wave propagating thereon.

29. A communication device including a surface acoustic wave device according to Claim 24.

30. A surface acoustic wave device including:
at least one surface acoustic wave filter having a balance-unbalance conversion function and including at least two comb-shaped electrode portions; and

surface acoustic wave resonators serially connected to respective balanced signal terminals of said surface acoustic wave device; wherein

said surface acoustic wave resonators have different intervals between tips of electrode fingers and dummy electrode fingers, each of which are connected to a bus bar thereof.

31. A surface acoustic wave device comprising:

at least two surface acoustic wave filter devices according to Claim 30, each of which includes at least two comb-shaped electrode portions; wherein

one of balanced signal terminals of said surface acoustic wave device is connected to a first of said at least two surface acoustic wave filter devices and the other of said balanced signal terminals is connected to a second of said at least two surface acoustic wave filter devices;

said first and second surface acoustic wave filter devices have a difference in at least one of:

an interval between tips of electrode fingers and a bus bar,

an interval between tips of electrode fingers and dummy electrode fingers connected to a bus bar,

a length of the dummy electrode fingers connected to a bus bar,

a film thickness of said bus bar,

a film structure of said bus bar,

and including a difference in at least one of:

a material of a sound absorptive material with which said bus bar is coated, and a thickness thereof, between said first and second surface acoustic wave filter devices.

32. A surface acoustic wave device according to Claim 30, including at least three comb-shaped electrode portions, wherein one of said comb-shaped electrode portions connected to one of the balanced signal terminals of said surface acoustic wave device and another one of said comb-shaped electrode portions connected to the other of said balanced signal terminal have a difference in at least one of:

an interval between tips of electrode fingers and a bus bar,

an interval between tips of electrode fingers and dummy electrode fingers connected to a bus bar,

a length of dummy electrode fingers each of which are connected to said bus bar,

a film thickness of said bus bar,

a film structure of said bus bar,

and including a difference in at least one of a material of a sound absorptive material with which said bus bar is coated, and a thickness thereof, between said comb-shaped electrode portions connected to said balanced signal terminals.

33. A surface acoustic wave device according to Claim 30, wherein electrode fingers of a portion facing one of the comb-shaped electrode portions coupled to another of the comb-shaped electrode portion connected to one of balanced signal terminals are connected to a signal terminal, and electrode fingers of a portion facing one of the comb-shaped electrode portions coupled to another of the comb-shaped electrode portions connected to the other balanced signal terminal are grounded.

34. A surface acoustic wave device according to Claim 30, wherein said comb-shaped electrodes are arranged with an interval between tips of electrode fingers and a bus bar of about $0.1\text{ }\mu\text{m}$ or more, and equal to or less than about 0.55 times as great as the wavelength of the surface acoustic wave propagating thereon.

35. A communication device including a surface acoustic wave device according to Claim 30.

36. A surface acoustic wave device including:
at least one surface acoustic wave filter having a balance-unbalance conversion function and including at least two comb-shaped electrode portions; and
surface acoustic wave resonators serially connected to respective balanced signal terminals of said surface acoustic wave device; wherein
said surface acoustic wave resonators include different lengths of dummy electrode fingers, each of which are connected to a bus bar so as to be introduced between electrode finger and a bus bar thereof.

37. A surface acoustic wave device comprising:
at least two surface acoustic wave filter devices according to Claim 36, each of which includes at least two comb-shaped electrode portions; wherein
one of the balanced signal terminals of said surface acoustic wave device is connected to a first of said at least two surface acoustic wave filter devices and the other of said balanced signal terminals is connected to a second of said at least two surface acoustic wave filter devices;
said first and second surface acoustic wave filter devices have a difference in at least one of:
an interval between tips of electrode fingers and a bus bar,

an interval between tips of electrode fingers and dummy electrode fingers connected to a bus bar,
a length of the dummy electrode fingers connected to a bus bar,
a film thickness of said bus bar,
a film structure of said bus bar,
and including a difference in at least one of:
a material of a sound absorptive material with which said bus bar is coated, and a thickness thereof, between said first and second surface acoustic wave filter devices.

38. A surface acoustic wave device according to Claim 36, including at least three comb-shaped electrode portions, wherein one of said comb-shaped electrode portions connected to one of the balanced signal terminals of said surface acoustic wave device and another one of said comb-shaped electrode portions connected to the other of said balanced signal terminals have a difference in at least one of:

an interval between tips of electrode fingers and a bus bar,
an interval between tips of electrode fingers and dummy electrode fingers connected to a bus bar,
a length of dummy electrode fingers each of which are connected to said bus bar,
a film thickness of said bus bar,
a film structure of said bus bar,
and including a difference in at least one of:
a material of a sound absorptive material with which said bus bar is coated, and a thickness thereof, between said comb-shaped electrode portions connected to said balanced signal terminals.

39. A surface acoustic wave device according to Claim 36, wherein electrode fingers of a portion facing one of the comb-shaped electrode portions coupled to another of the comb-shaped electrode portions connected to one of balanced signal terminals are connected to a signal terminal, and electrode fingers of a portion facing one of the comb-shaped electrode portions coupled to another of the comb-shaped electrode portions connected to the other balanced signal terminal are grounded.

40. A surface acoustic wave device according to Claim 36, wherein said comb-shaped electrodes are arranged with an interval between tips of electrode fingers and a bus bar of about $0.1\text{ }\mu\text{m}$ or more, and equal to or less than about 0.55 times as great as the wavelength of the surface acoustic wave propagating thereon.

41. A communication device including a surface acoustic wave device according to Claim 36.

42. A surface acoustic wave device including:
at least one surface acoustic wave filter having a balance-unbalance conversion function and including at least two comb-shaped electrode portions; and
surface acoustic wave resonators serially connected to respective balanced signal terminals of said surface acoustic wave device; wherein
said surface acoustic wave resonators have at least one of different film thicknesses of bus bar portions and different film structures thereof.

43. A surface acoustic wave device comprising:
at least two surface acoustic wave filter devices according to Claim 42, each of which includes at least two comb-shaped electrode portions; wherein
one of the balanced signal terminals of said surface acoustic wave device is connected to a first of said at least two surface acoustic wave filter devices and the other of said balanced signal terminals is connected to a second of said at least two surface acoustic wave filter devices;
said first and second surface acoustic wave filter devices have a difference in at least one of:
an interval between tips of electrode fingers and a bus bar,
an interval between tips of electrode fingers and dummy electrode fingers connected to a bus bar,
a length of dummy electrode fingers connected to a bus bar,
a film thickness of said bus bar,
a film structure of said bus bar,
and including a difference in at least one of:
a material of a sound absorptive material with which said bus bar is coated, and a thickness thereof, between said first and second surface acoustic wave filter devices.

44. A surface acoustic wave device according to Claim 42, including at least three comb-shaped electrode portions, wherein one of said comb-shaped electrode portions connected to one of the balanced signal terminals of said surface acoustic wave device and another one of said comb-shaped electrode portions connected to the other of said balanced signal terminals have a difference in at least one of:
an interval between tips of electrode fingers and a bus bar,

an interval between tips of electrode fingers and dummy electrode fingers connected to a bus bar,
a length of dummy electrode fingers each of which are connected to said bus bar,
a film thickness of said bus bar,
a film structure of said bus bar,
and including a difference in at least one of:
a material of a sound absorptive material with which said bus bar is coated, and a thickness thereof, between said comb-shaped electrode portions connected to said balanced signal terminals.

45. A surface acoustic wave device according to Claim 42, wherein electrode fingers of a portion facing one of the comb-shaped electrode portions coupled to another of the comb-shaped electrode portions connected to one of balanced signal terminals are connected to a signal terminal, and electrode fingers of a portion facing one of the comb-shaped electrode portions coupled to another of the comb-shaped electrode portions connected to the other balanced signal terminal are grounded.

46. A surface acoustic wave device according to Claim 42, wherein said comb-shaped electrodes are provided with an interval between the tips of electrode fingers and a bus bar of about 0.1 μm or more, and equal to or less than about 0.55 times as great as the wavelength of the surface acoustic wave propagating thereon.

47. A communication device including a surface acoustic wave device according to Claim 42.

48. A surface acoustic wave device including:
at least one surface acoustic wave filter having a balance-unbalance conversion function and including at least two comb-shaped electrode portions; and
surface acoustic wave resonators serially connected to respective balanced signal terminals of said surface acoustic wave device; wherein
said surface acoustic wave resonators include sound absorptive material with which bus bars thereof are coated, the sound absorptive material of the surface acoustic wave resonators having at least one of different compositions and different thicknesses.

49. A surface acoustic wave device comprising:
at least two surface acoustic wave filter devices according to Claim 48, each of which includes at least two comb-shaped electrode portions; wherein

one of the balanced signal terminals of said surface acoustic wave device is connected to a first of said at least two surface acoustic wave filter devices and the other of said balanced signal terminals is connected to a second of said at least two surface acoustic wave filter devices;

said first and second surface acoustic wave filter devices have a difference in at least one of:

an interval between tips of electrode fingers and a bus bar,

an interval between tips of electrode fingers and dummy electrode fingers connected to a bus bar,

a length of dummy electrode fingers connected to a bus bar,

a film thickness of said bus bar,

a film structure of said bus bar,

and including a difference in at least one of:

a material of a sound absorptive material with which said bus bar is coated, and a thickness thereof, between said first and second surface acoustic wave filter devices.

50. A surface acoustic wave device according to Claim 48, including at least three comb-shaped electrode portions, wherein one of said comb-shaped electrode portions connected to one of the balanced signal terminals of said surface acoustic wave device and another one of said comb-shaped electrode portions connected to the other of said balanced signal terminals have a difference in at least one of:

an interval between tips of electrode fingers and a bus bar,

an interval between tips of electrode fingers and dummy electrode fingers connected to a bus bar,

a length of dummy electrode fingers each of which are connected to said bus bar,

a film thickness of said bus bar,

a film structure of said bus bar,

and including a difference in at least one of:

a material of a sound absorptive material with which said bus bar is coated, and a thickness thereof, between said comb-shaped electrode portions connected to said balanced signal terminals.

51. A surface acoustic wave device according to Claim 48, wherein electrode fingers of a portion facing a comb-shaped electrode portion coupled to a comb-shaped electrode portion connected to one of balanced signal terminals are connected to a signal terminal, and electrode

fingers of a portion facing a comb-shaped electrode portion coupled to a comb-shaped electrode portion connected to the other balanced signal terminal are grounded.

52. A surface acoustic wave device according to Claim 48, wherein said comb-shaped electrodes are arranged with an interval between the tips of electrode fingers and a bus bar of about 0.1 μm or more, and equal to or less than about 0.55 times as great as the wavelength of the surface acoustic wave propagating thereon.

53. A communication device including a surface acoustic wave device according to Claim 48.

54. A surface acoustic wave device having a balance-unbalance conversion function, comprising:

at least two surface acoustic wave filters, each of which include at least two comb-shaped electrode portions; wherein

an unbalanced signal terminal of said surface acoustic wave device is connected to two of said surface acoustic wave filters, and each of two balanced signal terminals of said surface acoustic wave device are connected to separate surface acoustic wave filters;

surface acoustic wave resonators are serially connected between said unbalanced signal terminal, and each of said two surface acoustic wave filter devices connected to said unbalanced signal terminal; and

said two surface acoustic wave resonators have different intervals between tips of electrode fingers and bus bars thereof.

55. A surface acoustic wave device comprising:

at least two surface acoustic wave filter devices according to Claim 54, each of which includes at least two comb-shaped electrode portions; wherein

one of the balanced signal terminals of said surface acoustic wave device is connected to a first of said at least two surface acoustic wave filter devices and the other of said balanced signal terminals is connected to a second of said at least two surface acoustic wave filter devices;

said first and second surface acoustic wave filter devices have a difference in at least one of:

an interval between tips of electrode fingers and a bus bar,

an interval between tips of electrode fingers and dummy electrode fingers connected to a bus bar,

a length of the dummy electrode fingers connected to a bus bar,

a film thickness of said bus bar,
a film structure of said bus bar,
and including a difference in at least one of:

a material of a sound absorptive material with which said bus bar is coated, and a thickness thereof, between said first and second surface acoustic wave filter devices.

56. A surface acoustic wave device according to Claim 54, including at least three comb-shaped electrode portions, wherein one of said comb-shaped electrode portions connected to one of the balanced signal terminals of said surface acoustic wave device and another one of said comb-shaped electrode portions connected to the other of said balanced signal terminals have a difference in at least one of:

an interval between tips of electrode fingers and a bus bar,
an interval between tips of electrode fingers and dummy electrode fingers

connected to a bus bar,

a length of dummy electrode fingers each of which are connected to said bus bar,
a film thickness of said bus bar,
a film structure of said bus bar,
and including a difference in at least one of:

a material of a sound absorptive material with which said bus bar is coated, and a thickness thereof, between said comb-shaped electrode portions connected to said balanced signal terminals.

57. A surface acoustic wave device according to Claim 54, wherein electrode fingers of a portion facing one of the comb-shaped electrode portions coupled to another of the comb-shaped electrode portions connected to one of the balanced signal terminals are connected to a signal terminal, and electrode fingers of a portion facing one of the comb-shaped electrode portions coupled to another of the comb-shaped electrode portions connected to the other balanced signal terminal are grounded.

58. A surface acoustic wave device according to Claim 54, wherein said comb-shaped electrodes are arranged with an interval between tips of electrode fingers and a bus bar of about $0.1\text{ }\mu\text{m}$ or more, and equal to or less than about 0.55 times as great as the wavelength of the surface acoustic wave propagating thereon.

59. A communication device including a surface acoustic wave device according to Claim 54.

60. A surface acoustic wave device having a balance-unbalance conversion function, comprising:

at least two surface acoustic wave filters, each of which include at least two comb-shaped electrode portions; wherein

an unbalanced signal terminal of said surface acoustic wave device is connected to two of said surface acoustic wave filters, and each of two balanced signal terminals of said surface acoustic wave device are connected to separate surface acoustic wave filters;

surface acoustic wave resonators are serially connected between said unbalanced signal terminal, and each of said two surface acoustic wave filter devices connected to said unbalanced signal terminal; and

said surface acoustic wave resonators have different intervals between tips of electrode fingers and dummy electrode fingers thereof, each of which are connected to a bus bar thereof.

61. A surface acoustic wave device comprising:

at least two surface acoustic wave filter devices according to Claim 60, each of which includes at least two comb-shaped electrode portions; wherein

one of the balanced signal terminals of said surface acoustic wave device is connected to a first of said at least two surface acoustic wave filter devices and the other of said balanced signal terminals is connected to a second of said at least two surface acoustic wave filter devices;

said first and second surface acoustic wave filter devices have a difference in at least one of:

an interval between tips of electrode fingers and a bus bar,

an interval between tips of electrode fingers and dummy electrode fingers connected to a bus bar,

a length of dummy electrode fingers connected to a bus bar,

a film thickness of said bus bar,

a film structure of said bus bar,

and including a difference in at least one of:

a material of a sound absorptive material with which said bus bar is coated, and a thickness thereof, between said first and second surface acoustic wave filter devices.

62. A surface acoustic wave device according to Claim 60, including at least three comb-shaped electrode portions, wherein one of said comb-shaped electrode portions connected to one of the balanced signal terminals of said surface acoustic wave device and another one of

said comb-shaped electrode portions connected to the other of said balanced signal terminals have a difference in at least one of:

an interval between tips of electrode fingers and a bus bar,

an interval between tips of electrode fingers and dummy electrode fingers

connected to a bus bar,

a length of dummy electrode fingers each of which are connected to said bus bar,

a film thickness of said bus bar,

a film structure of said bus bar,

and including a difference in at least one of:

a material of a sound absorptive material with which said bus bar is coated, and a thickness thereof, between said comb-shaped electrode portions connected to said balanced signal terminals.

63. A surface acoustic wave device according to Claim 60, wherein electrode fingers of a portion facing one of the comb-shaped electrode portions coupled to another of the comb-shaped electrode portions connected to one of balanced signal terminals are connected to a signal terminal, and electrode fingers of a portion facing one of the comb-shaped electrode portions coupled to another of the comb-shaped electrode portions connected to the other balanced signal terminal are grounded.

64. A surface acoustic wave device according to Claim 60, wherein said comb-shaped electrodes are arranged with an interval between the tips of electrode fingers and a bus bar of about 0.1 μm or more, and equal to or less than about 0.55 times as great as the wavelength of the surface acoustic wave propagating thereon.

65. A communication device including a surface acoustic wave device according to Claim 60.

66. A surface acoustic wave device having a balance-unbalance conversion function, comprising:

at least two surface acoustic wave filters, each of which include at least two comb-shaped electrode portions; wherein

an unbalanced signal terminal of said surface acoustic wave device is connected to two of said surface acoustic wave filters, and each of two balanced signal terminals of said surface acoustic wave device are connected to separate surface acoustic wave filters;

surface acoustic wave resonators are serially connected between said unbalanced signal terminal, and each of said two surface acoustic wave filter devices connected to said unbalanced signal terminal; and

said surface acoustic wave resonators include different lengths of dummy electrode fingers, each of which are connected to a bus bar thereof so as to be introduced between an electrode finger and said bus bar of the comb-shaped electrode portions.

67. A surface acoustic wave device comprising:

at least two surface acoustic wave filter devices according to Claim 66, each of which includes at least two comb-shaped electrode portions; wherein

one of the balanced signal terminals of said surface acoustic wave device is connected to a first of said at least two surface acoustic wave filter devices and the other of said balanced signal terminals is connected to a second of said at least two surface acoustic wave filter devices;

said first and second surface acoustic wave filter devices have a difference in at least one of:

an interval between tips of electrode fingers and a bus bar,

an interval between tips of electrode fingers and dummy electrode fingers connected to a bus bar,

a length of dummy electrode fingers connected to a bus bar,

a film thickness of said bus bar,

a film structure of said bus bar,

and including a difference in at least one of:

a material of a sound absorptive material with which said bus bar is coated, and a thickness thereof, between said first and second surface acoustic wave filter devices.

68. A surface acoustic wave device according to Claim 66, including at least three comb-shaped electrode portions, wherein one of said comb-shaped electrode portions connected to one of the balanced signal terminals of said surface acoustic wave device and another one of said comb-shaped electrode portions connected to the other of said balanced signal terminals have a difference in at least one of:

an interval between tips of electrode fingers and a bus bar,

an interval between tips of electrode fingers and dummy electrode fingers connected to a bus bar,

a length of dummy electrode fingers each of which are connected to said bus bar, a film thickness of said bus bar,

a film structure of said bus bar,

and including a difference in at least one of:

a material of a sound absorptive material with which said bus bar is coated, and a thickness thereof, between said comb-shaped electrode portions connected to said balanced signal terminals.

69. A surface acoustic wave device according to Claim 66, wherein electrode fingers of a portion facing one of the comb-shaped electrode portions coupled to another of the comb-shaped electrode portions connected to one of balanced signal terminals are connected to a signal terminal, and electrode fingers of a portion facing one of the comb-shaped electrode portions coupled to another of the comb-shaped electrode portions connected to the other balanced signal terminal are grounded.

70. A surface acoustic wave device according to Claim 66, wherein said comb-shaped electrodes are arranged with an interval between the tips of electrode fingers and a bus bar of about 0.1 μm or more, and equal to or less than about 0.55 times as great as the wavelength of the surface acoustic wave propagating thereon.

71. A communication device including a surface acoustic wave device according to Claim 66.

72. A surface acoustic wave device having a balance-unbalance conversion function, comprising:

at least two surface acoustic wave filters, each of which include at least two comb-shaped electrode portions; wherein

an unbalanced signal terminal of said surface acoustic wave device is connected to two of said surface acoustic wave filters, and each of two balanced signal terminals of said surface acoustic wave device are connected to separate surface acoustic wave filters;

surface acoustic wave resonators are serially connected between said unbalanced signal terminal, and each of said two surface acoustic wave filter devices connected to said unbalanced signal terminal; and

said surface acoustic wave resonators include at least one of different film structures of bus bar portions and different film thickness thereof.

73. A surface acoustic wave device comprising:

at least two surface acoustic wave filter devices according to Claim 72, each of which includes at least two comb-shaped electrode portions; wherein

one of the balanced signal terminals of said surface acoustic wave device is connected to a first of said at least two surface acoustic wave filter devices and the other of said balanced signal terminals is connected to a second of said at least two surface acoustic wave filter devices;

said first and second surface acoustic wave filter devices have a difference in at least one of:

an interval between tips of electrode fingers and a bus bar,

an interval between tips of electrode fingers and dummy electrode fingers

connected to a bus bar,

a length of dummy electrode fingers connected to a bus bar,

a film thickness of said bus bar,

a film structure of said bus bar,

and including a difference in at least one of:

a material of a sound absorptive material with which said bus bar is coated, and a thickness thereof, between said first and second surface acoustic wave filter devices.

74. A surface acoustic wave device according to Claim 72, including at least three comb-shaped electrode portions, wherein one of said comb-shaped electrode portions connected to one of the balanced signal terminals of said surface acoustic wave device and another one of said comb-shaped electrode portions connected to the other of said balanced signal terminals have a difference in at least one of:

an interval between tips of electrode fingers and a bus bar,

an interval between tips of electrode fingers and dummy electrode fingers

connected to a bus bar,

a length of dummy electrode fingers each of which are connected to said bus bar,

a film thickness of said bus bar,

a film structure of said bus bar,

and including a difference in at least one of:

a material of a sound absorptive material with which said bus bar is coated, and a thickness thereof, between said comb-shaped electrode portions connected to said balanced signal terminals.

75. A surface acoustic wave device according to Claim 72, wherein electrode fingers of a portion facing one of the comb-shaped electrode portions coupled to another of the comb-shaped electrode portions connected to one of the balanced signal terminals are connected to a signal terminal, and electrode fingers of a portion facing one of the comb-shaped electrode

portions coupled to another of the comb-shaped electrode portions connected to the other balanced signal terminal are grounded.

76. A surface acoustic wave device according to Claim 72, wherein said comb-shaped electrodes are arranged with an interval between the tips of electrode fingers and a bus bar of about 0.1 μm or more, and equal to or less than about 0.55 times as great as the wavelength of the surface acoustic wave propagating thereon.

77. A communication device including a surface acoustic wave device according to Claim 72.

78. A surface acoustic wave device having a balance-unbalance conversion function, comprising:

- at least two surface acoustic wave filters, each of which include at least two comb-shaped electrode portions; wherein

- an unbalanced signal terminal of said surface acoustic wave device is connected to two of said surface acoustic wave filters, and each of two balanced signal terminals of said surface acoustic wave device are connected to separate surface acoustic wave filters;

- surface acoustic wave resonators are serially connected between said unbalanced signal terminal, and each of said two surface acoustic wave filter devices connected to said unbalanced signal terminal; and

- said surface acoustic wave resonators include sound absorptive material with which bus bars thereof are coated, the sound absorptive material of the surface acoustic wave resonators having at least one of different compositions and different thicknesses.

79. A surface acoustic wave device comprising:

- at least two surface acoustic wave filter devices according to Claim 78, each of which includes at least two comb-shaped electrode portions; wherein

- one of the balanced signal terminals of said surface acoustic wave device is connected to a first of said at least two surface acoustic wave filter devices and the other of said balanced signal terminals is connected to a second of said at least two surface acoustic wave filter devices;

- said first and second surface acoustic wave filter devices have a difference in at least one of:

- an interval between tips of electrode fingers and a bus bar,

- an interval between tips of electrode fingers and dummy electrode fingers connected to a bus bar,

a length of dummy electrode fingers connected to a bus bar,
a film thickness of said bus bar,
a film structure of said bus bar,
and including a difference in at least one of:
a material of a sound absorptive material with which said bus bar is coated, and a
thickness thereof, between said first and second surface acoustic wave filter devices.

80. A surface acoustic wave device according to Claim 78, including at least three comb-shaped electrode portions, wherein one of said comb-shaped electrode portions connected to one of the balanced signal terminals of said surface acoustic wave device and another one of said comb-shaped electrode portions connected to the other of said balanced signal terminal have a difference in at least one of:

an interval between tips of electrode fingers and a bus bar,
an interval between tips of electrode fingers and dummy electrode fingers
connected to a bus bar,
a length of dummy electrode fingers each of which are connected to said bus bar,
a film thickness of said bus bar,
a film structure of said bus bar,
and including a difference in at least one of:
a material of a sound absorptive material with which said bus bar is coated, and a
thickness thereof, between said comb-shaped electrode portions connected to said balanced
signal terminals.

81. A surface acoustic wave device according to Claim 78, wherein electrode fingers of a portion facing one of the comb-shaped electrode portions coupled to another of the comb-shaped electrode portions connected to one of balanced signal terminals are connected to a signal terminal, and electrode fingers of a portion facing one of the comb-shaped electrode portions coupled to another of the comb-shaped electrode portions connected to the other balanced signal terminal are grounded.

82. A surface acoustic wave device according to Claim 78, wherein said comb-shaped electrodes are arranged with an interval between the tips of electrode fingers and a bus bar of about 0.1 μm or more, and equal to or less than about 0.55 times as great as the wavelength of the surface acoustic wave propagating thereon.

83. A communication device including a surface acoustic wave device according to Claim 78.